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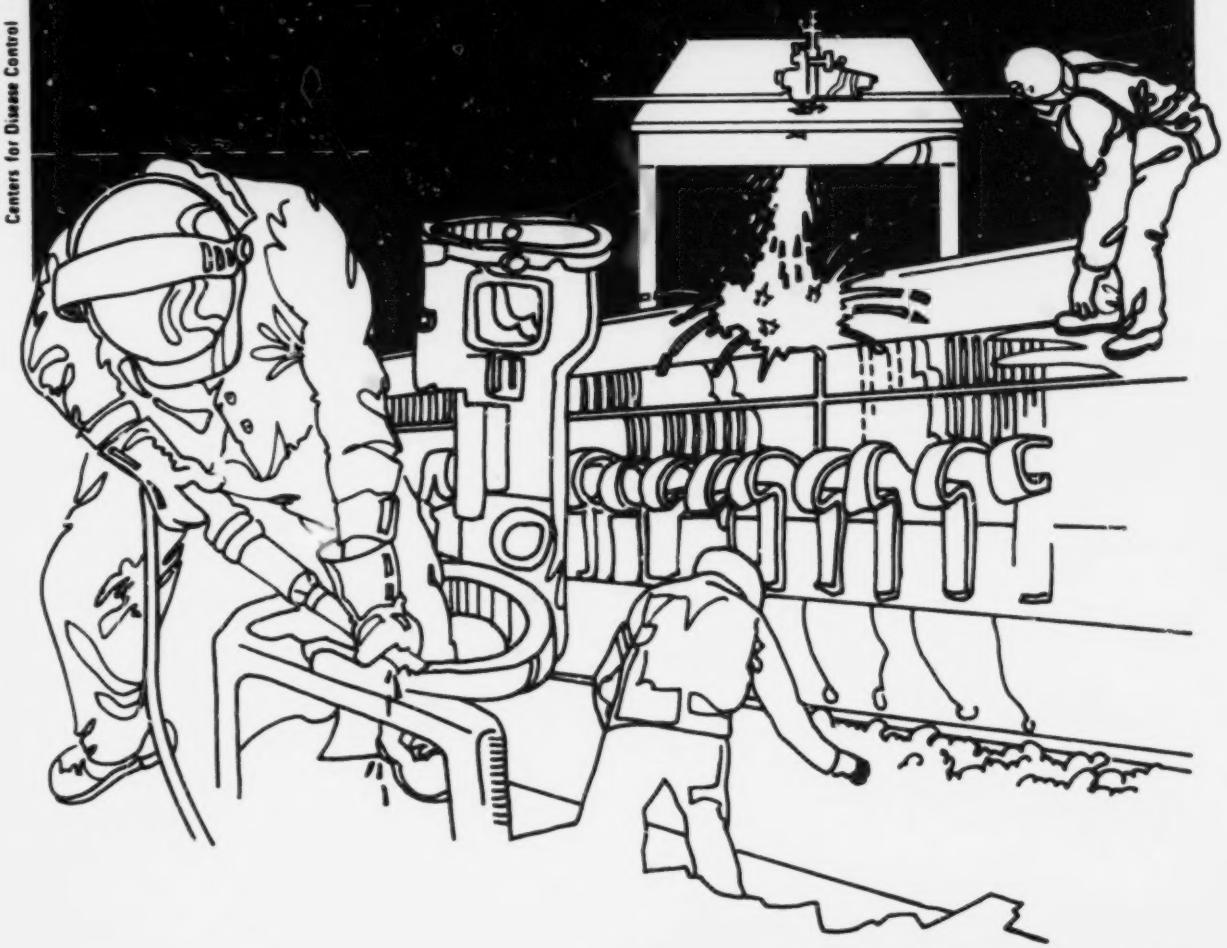

Health Hazard Evaluation Summaries

JANUARY 1982

HEALTH HAZARD EVALUATION SUMMARIES

JANUARY 1982

U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES
Public Health Service
Centers for Disease Control
National Institute for Occupational Safety and Health
Cincinnati, Ohio 45226

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PREFACE

This publication was developed by the National Institute for Occupational Safety and Health (NIOSH) to disseminate information generated as part of its Health Hazard Evaluation and Technical Assistance Program (HETA). The Hazard Evaluations and Technical Assistance Branch of NIOSH conducts field investigations of possible health hazards in the workplace. These investigations are conducted under the authority of Section 20(a)(6) of the Occupational Safety and Health Act of 1970, 29 U.S.C. 669(a)(6), which authorizes the Secretary of Health and Human Services, following a written request from any employer or authorized representative of employees, to determine whether any substance found in the place of employment has potentially toxic effects in such concentrations as used or found. NIOSH also provides, upon request, medical, nursing, and industrial hygiene technical and consultative assistance (TA) to Federal, state, and local agencies; labor; industry; and other groups or individuals to control and/or prevent occupational health hazards and related trauma and disease.

Reviewing these summaries of recent reports, the reader gains a sense of the types of hazards and workplaces that NIOSH has recently investigated and the approaches used, as well as recommended control procedures.

A table of contents lists the report number, workplace investigated, NTIS stock number, and page number for each summary. An index by key word is provided to aid readers in identifying those reports on chemicals or processes in which the reader has an interest.

The complete HHE report may be obtained from NTIS as described on page 41. A Health Hazard Evaluation Request Form (page 47) is included for those who would like to request a survey at their workplace. Read the instructions carefully before completing the form, then forward it to the address listed on the bottom of page 46.

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HETA 80-099-707
DENVER DRYGOODS
DENVER, COLORADO

NIOSH INVESTIGATOR:
Bobby Gunter, Ph.D., I.H.

SUMMARY

In March 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request to evaluate exposures to lithium (LiH) and lead (Pb) during the repair of the air conditioning system at Denver Dry Goods, Denver, Colorado. The worker and the work area were monitored for lithium and lead exposure. The worker's exposures to lead and lithium were 0.03 mg/M^3 and 0.008 mg/M^3, respectively. General room air samples ranged from 0.008 to 0.01 mg/M^3 for lithium, and 0.01 to 0.02 mg/M^3 for lead. All air sample values were well within the recommended levels of 0.05 mg Pb/M^3 and 0.025 mg LiH/M^3.

On the basis of the environmental data collected during this investigation, no health hazard existed from exposure to lithium or lead at Denver Dry Goods, Denver, Colorado. Recommendations on ventilation and work practices necessary to control potential hazards are included in the body of the full report.

KEYWORDS: SIC 3585 (Air Conditioning Units), lead, lithium.

HETA 78-044-715
KAISER ALUMINUM AND CHEMICAL CORPORATION
RAVENSWOOD, WEST VIRGINIA

NIOSH INVESTIGATORS:
Kenneth Kronoveter, I.H.
Theodore Thoburn, M.D.

SUMMARY

On January 1, 1978, the National Institute for Occupational Safety and Health (NIOSH) received a request to "update" environmental conditions and "evaluate" the ventilation systems within the potrooms at the Kaiser Aluminum and Chemical Corporation, Ravenswood, West Virginia.

Personal and area air samples were obtained for determination of coal tar pitch volatiles (CTPVs) (benzene solubles), polynuclear aromatic hydrocarbons (PNAs), total particulates, and fluorides. Indicator tube sampling was performed for sulfur dioxide, carbon monoxide, and hydrogen fluoride. Bulk samples of anodes and cathodes were analyzed for CTPVs and PNAs, while workers were interviewed using nondirected medical questionnaires. The ventilation assessment was done using observations, air velocity measurements, and company data.

CTPV concentrations in 14 of 46 personal samples exceeded the NIOSH recommendation of 0.10 mg/M^3, while PNA analyses on 27 of the same 46 samples showed PNAs to be present in every instance. Three of 28 personal samples exceeded the Threshold Limit Value of 10.0 mg/M^3 for total particulates, while none of the 25 personal samples for fluorides exceeded the NIOSH recommendation of 2.5 mg/M^3. Fifteen of 27 indicator tube samples exceeded the NIOSH recommendation of 3 ppm (ceiling) for sulfur dioxide, while none of the 12 samples for carbon monoxide nor none of the 4 samples for hydrogen fluoride exceeded the NIOSH recommendations of 200 ppm (ceiling) and 5.0 mg/M^3 (15-minute), respectively. The bulk sample analyses showed the presence of benzene solubles in the "green" anodes and cathodes. The bulk sample analyses of "baked" and "spent," as compared with "green," anodes and cathodes showed significant reductions in both the benzene solubles and PNAs (the PNAs being generally below the laboratory limits of detection). The bulk sample analyses for free silica in the ore and bath indicated concentrations of quartz and cristobalite below the laboratory limits of detection.

Results of the 21 medical questionnaires indicated that dust and off-gases from the pots (particularly during anode replacement) may be causing some mucous membrane irritation. The ventilation assessment showed the pothood system to be of sound design, but that deficiencies in maintenance and housekeeping may be reducing its intrinsic efficiency. Since a portion of the ore fed into the pots was recycled from air pollution scrubbing units and, thus, contained fluorides and hydrocarbons, the efficiency of the pothood system had become more critical. Also, the roof ventilators protrude only a few inches above the roof and the possibility existed for downwash and unplanned recirculation of contaminanted air.

On the basis of the data gathered during this investigation, NIOSH concluded that potentially hazardous exposures to coal tar pitch volatiles (benzene solubles which contain polynuclear aromatic hydrocarbons), total particulates, and sulfur dioxide existed for certain of the potroom workers. Also, some workers may have experienced respiratory irritation. The potroom ventilation systems were of basically sound design, but certain deficiencies were reducing the intrinsic effectiveness of these systems. Recommendations directed towards reducing workers' exposures are presented in the body of the full report.

KEYWORDS: SIC 3361 (Aluminum Foundries), coal tar pitch volatiles, CTPV, polynuclear aromatic hydrocarbons, PNA, total particulates, fluorides, hydrogen fluoride, sulfur dioxide, ventilation, benzene solubles.

HETA 80-021-721
COLGATE-PALMOLIVE COMPANY
BERKELEY, CALIFORNIA

NIOSH INVESTIGATOR:
Pierre Belanger, I.H.

SUMMARY

On November 13, 1979, the National Institute for Occupational Safety and Health (NIOSH) received a confidential request from an authorized representative from Local 6 of the International Longshoremen's and Warehousemen's Union to evaluate workers' exposure to 1,4 dioxane, a contaminant of 3EO-Sulfate compound used in liquid detergents at the Colgate-Palmolive Company, Berkeley, California.

Twenty-nine environmental air samples (personal and area) were collected from the storage area, the mixing area, and the finishing line for the measurement of 1,4 dioxane. Also, six bulk samples of liquid detergents and one bulk sample of 3EO-Sulfate were analyzed for 1,4 dioxane concentration. The airborne concentration of dioxane was measured to be below the limit of detection. Furthermore, the concentration of dioxane in the bulk samples was less than 1 percent by weight--the limit recommended in the NIOSH Dioxane Criteria Document for materials where dioxane is present as an unintentional contaminent.

Based on the environmental air results and the analyses of the bulk samples, NIOSH concluded that a health hazard from exposures to 1,4 dioxane did not exist at Colgate-Palmolive, Berkeley, California, during the dates of this survey.

KEYWORDS: SIC 2840 (Soap, Detergents, and Cleaning Preparations), dioxane, 1,4 dioxane, 3EO-Sulfate.

HETA 80-089-723
DENVER RADIATOR AND SHUTTER SERVICE
DENVER, COLORADO

NIOSH INVESTIGATORS:
Bobby Gunter, Ph.D., I.H.
Paul Pryor, I.H.

SUMMARY

In March 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request to evaluate occupational exposures to lead (Pb) at Denver Radiator and Shutter Service, Denver, Colorado. All 12 workers were questioned about potential sources of lead exposure and about medical problems possibly associated with excessive lead exposures. Each worker was monitored for breathing-zone lead, and general room air samples for lead analysis were obtained. Venous blood samples were obtained for whole blood lead analysis.

Eight workers had lead levels above 40 micrograms of lead per 100 grams of whole blood (ug Pb/100 g). Three of these workers were above 60 ug Pb/100 g. Breathing-zone and general room air samples for lead analysis were also obtained. Forty percent of the breathing-zone and general room air samples exceeded the Occupational Safety and Health Adminstration (OSHA) standard of 50 micrograms of substance per cubic meter of air (ug/M^3). Values ranged from 10 to 570 ug/M^3.

On the basis of environmental and medical data gathered in this investigation, NIOSH concluded that a health hazard existed from overexposure to lead at Denver Radiator and Shutter Service. Recommendations on ventilation, work practices, and biological monitoring procedures necessary to control this hazard are included in the body of the full report.

KEYWORDS: SIC 7539 (Automotive Repair Shops), lead, automobile radiators.

HETA 80-110-724
FAIRFIELD INDUSTRIAL PRODUCTS
COMMACK, NEW YORK

NIOSH INVESTIGATOR:
Jacqueline Messite, M.D.

SUMMARY

The National Institute for Occupational Safety and Health (NIOSH) received a request to investigate outbreaks of illness (eye, nose, and throat irritation, headache, lightheadedness, and bitter taste in the mouth) which had occurred March 13-17 and April 2-4, 1980, involving 33 employees at Fairfield Industrial Products Building #76 assembly plant. Environmental samples were collected on April 8 and 24, workers were interviewed, and the plant nurse's notes made during the incidents were reviewed.

Analysis of the samples of airborne contaminants revealed small concentrations (about 2% of permissible levels) of Freon 113, methyl chloroform, isopropyl alcohol, toluene, and perchloroethylene throughout the work area of the plant. However, between the time of the outbreaks and the NIOSH visits, changes in the work environment had been made (e.g., replacement and relocation of the Freon 113 degreaser, limitation of the use of solvents at the work benches, and reduction of heating requirements). Hence, it was not possible to replicate conditions which existed at the time of the outbreaks. Review of the plant nurse's notes and of the employee interviews revealed signs and symptoms compatible with solvent exposure.

Based on the employee interviews and the environmental survey, NIOSH concluded that an occupational health hazard of exposure to solvents probably did occur at the times of the illness outbreaks. Significant steps have already been taken to alleviate this hazard. Further recommendations to reduce the potential for similar occurrences are found in the body of the full report.

KEYWORDS: SIC 3728 (Aircraft Parts and Auxillary Equipment), solvents, Freon 113, toluene, methyl chloroform, isopropyl alcohol, perchloroethylene, eye, nose, and throat irritation.

HETA 80-037-725
TEXACO, INCORPORATED
CASPER, WYOMING

NIOSH INVESTIGATORS:
Raymond Ruhe, I.H.
Bobby Gunter, Ph.D., I.H.

SUMMARY

The National Institute for Occupational Safety and Health (NIOSH) received a request from the Oil, Chemical, and Atomic Workers Union for a Health Hazard Evaluation at Texaco, Incorporated, Casper, Wyoming. The request concerned employee exposure to welding fumes in the welding shop. On April 30 and May 1, 1980, environmental measurements were made to determine employee exposures to iron oxide, manganese, aluminum, copper, nickel, lead, and fluoride. Employees were interviewed regarding work histories and general physical condition.

Levels of iron oxide ranged from 0.1 to 1.3 mg/M3 (permissible exposure limit 5.0 mg/M3). Manganese ranged from less than detectable to 0.05 mg/M3 (permissible exposure limit 5.0 mg/M3). Aluminum ranged from less than detectable to 0.04 mg/M3 (permissible exposure limit 5.0 mg/M3). Copper ranged from less than detectable to 0.01 mg/M3 (permissible exposure limit 0.1 mg/M3). Nickel ranged from less than detectable to 0.01 mg/M3 (permissible exposure limit 0.015 mg/M3). Lead and fluoride were found to be less than detectable. All samples were below the most recent environmental criteria.

A nondirected questionnaire designed to elicit symptomatology possibly related to health problems arising from the work environment was completed on five exposed workers. The questionnaires failed to identify work-related employee health problems.

Based on the environmental sampling results, employee interviews, and available toxicological information, NIOSH concluded that a health hazard did not exist in the welding operations at the time of this study on April 30 and May 1, 1980. Recommendations to aid in providing a safe and healthful working environment are presented in the body of the full report.

KEYWORDS: SIC 2911 (Petroleum Refining), welding fumes.

HETA 77-099-726
DUPONT CHAMBERS WORKS
DEEPWATER, NEW JERSEY

NIOSH INVESTIGATOR:
Nicholas Fannick, I.H.

SUMMARY

The National Institute for Occupational Safety and Health (NIOSH) received a confidential request concerning exposures to chemicals at the Dupont Chambers Works in Deepwater, New Jersey. After several discussions with the requestor of the Health Hazard Evaluation and the representative of the employees, NIOSH decided to evaluate employee exposures to nitrotoluene and chlorobenzene compounds which had been identified in atmospheric samples collected at the Chambers Works as part of an Environmental Protection Agency project. Samples were collected in early October 1979. Exposures to chlorobenzene were less than 2 milligrams per cubic meter of air (mg/M3). Exposures to dinitrotoluene were less than 0.05 mg/M3. Concentrations of dichlorobenzene (all three isomers), 1,3,5-trichlorobenzene, nitrobenzene, and 1-chloro,2-nitrobenzene were less than could be determined analytically.

Exposures to chlorobenzene; dichlorobenzene isomers; 1,3,5-trichlorobenzene; nitrobenzene; 1-chloro,2-nitrobenzene; and dinitrotoluene were less than the permissible exposure limits established by the Occupational Safety and Health Administration (OSHA). Based on these data, NIOSH determined that a health hazard did not exist at the Dupont Chambers Works in Deepwater, New Jersey, during the time of this survey.

KEYWORDS: SIC 2899 (Chemicals and Chemical Preparations), nitrotoluene, chlorobenzene.

HETA 80-002-727
CONTINENTAL PLASTIC CONTAINERS
SPRINGDALE, OHIO

NIOSH INVESTIGATORS:
Steven Ahrenholz, I.H.
Richard Gorman, I.H.

SUMMARY

The National Institute for Occupational Safety and Health (NIOSH) received a request on October 15, 1979, from the president of Local 127, Glass Bottle Blowers Association, to identify and evaluate irritant chemical exposures occuring in the Orbet Module area of Continental Plastic Containers in Springdale, Ohio.

An evaluation of all the raw materials used in the process was conducted to identify potential irritants initially present, and sampling was performed in the production area for irritants generated during the process itself. Bulk samples of the polypropylene and high temperature synthetic lubricant, both used in the module ovens, were analyzed for release of irritant chemicals at operating temperatures. Area sampling for acetaldehyde, butyraldehyde, formaldehyde, propionaldehyde, valeraldehyde, aromatic amines (aniline), and phenol was conducted above the module oven lids where maximum concentrations were expected. Environmental samples indicated only formaldehyde to be present, in concentrations ranging from 0.72 to 0.90 mg/M^3 measured over an 8-hour shift. None of the environmental values exceeded applicable evaluation criteria. Accumulations of silicone on discharge chutes indicated potential exposure to silicone mist during module operation. Toxicity data on the silicones indicated that they can cause transient eye irritation in the liquid state, but do not produce any chronic health effects.

Medical questionnaires were completed for 17 employees during the initial survey. About 70 people were identified as working in the Orbet Module area. Medical questionnaires indicated that eye irritation was the major complaint (94% of those interviewed). Some minor upper respiratory irritation was also noted (65%).

On the basis of the data obtained in this investigation, NIOSH determined that the only airborne irritant detected, formaldehyde, was present in concentrations below applicable criteria. A silicone mold release agent, released as a mist at the exit chute of the modules, may be responsible for the eye irritation of the operators in the immediate vicinity. Other than the transient episodes of eye irritation, there was no evidence of exposure to any substance known to cause either acute or chronic health effects. Recommendations to reduce exposures to the silicone mist are presented in the body of the full report.

KEYWORDS: SIC 3070 (Miscellaneous Plastics Products), formaldehyde, silicone.

HETA 79-113-728
OLIN CHEMICAL COMPANY
BRANDENBURG, KENTUCKY

NIOSH INVESTIGATOR:
Steven Ahrenholz, I.H.

SUMMARY

The National Institute for Occupational Safety and Health (NIOSH) conducted a Health Hazard Evaluation to examine the reproductive problems being experienced by the employees of the toluene diamine (TDA) manufacturing area at Olin Chemical Company, Brandenburg, Kentucky. The request came from employees alleging increased rates of spontaneous abortions in the wives of TDA workers.

An initial walk-through survey was conducted September 26 and 27, 1979. Based on the results of the initial survey, which revealed a history of miscarriages, abnormal offspring, and semen abnormalities in TDA unit workers, a follow-up investigation was scheduled January 14 to 18, 1980. A detailed medical survey of these workers was conducted and personal and area samples for determination of airborne dinitrotoluene (DNT) and TDA levels were obtained.

Environmental results from the initial survey showed the two operator DNT exposures to be 0.013 mg/M3 and 0.023 mg/M3. Operator TDA exposures were 0.39 mg/M3 and 0.0233 mg/M3. An area DNT value of 0.42 mg/M3 and two TDA area values of 0.023 mg/M3 and 0.008 mg/M3 were also found. During the follow-up survey, only the operator doing TDA loading had a measurable exposure to TDA (0.038 mg/M3). Operator DNT exposures during the follow-up were 0.014 mg/M3 and 0.006 mg/M3 on the day DNT was unloaded. Area samples for TDA and DNT during the follow-up survey were negligible. All values were calculated as time-weighted averages (TWA's). Concentrations of DNT and TDA were lower during the follow-up survey than those seen initially in September. All DNT values were below the Occupational Safety and Health Administration (OSHA) standard of 1.5 mg/M3 TWA. No accepted TDA standard currently exists, but NIOSH recommends that levels be kept as low as possible and that the material be handled as a suspected carcinogen.

A total of 44 workers volunteered to participate in the medical survey. Workers were divided into three groups: control, intermediate (past history of low exposures, but no exposure for the last 2 years), and exposed. Medical and occupational histories, physical examinations, and blood, urine, and semen specimens were obtained. A reproductive history was also elicited. The wives of workers were given a different, more detailed reproductive questionnaire in an attempt to validate the information given by the workers themselves. Medical findings included a significant reduction in sperm count in the exposed group (p less than 0.05). An excess of miscarriages in the wives of the exposed workers was found, but this was not statistically significant and may not take into account the influence of other factors on miscarriages.

Based on the data gathered in this investigation, NIOSH determined that while this study cannot be interpreted as conclusive proof of TDA or DNT toxic effects on the male reproductive system, it is strongly suggestive of a problem in workers exposed to these agents. These effects were observed in the presence of declining DNT and TDA exposures, none of which exceeded current OSHA exposure limits during the survey. Detailed discussion of these findings and recommendations are contained in the body of the full report.

KEYWORDS: SIC 2810 (Industrial Inorganic Chemicals), toluene diamine, TDA, dinitrotoluene, DNT, miscarriages, reproductive abnormalities.

HETA 79-096-729
PROTECTIVE COATINGS CORPORATION
FORT WAYNE, INDIANA

NIOSH INVESTIGATORS:
G.E. Burroughs, I.H.
Dawn Tharr, I.H.

SUMMARY

A Health Hazard Evaluation was conducted by the National Institute for Occupational Safety and Health (NIOSH) at the Protective Coatings Corporation plant in Fort Wayne, Indiana, on June 8, July 31, and August 1, 1979. The purpose of this evaluation was to study possible hazards to employees resulting from occupational exposure to various substances used in the relining of tanks. Environmental samples were taken for toluene, xylene, methyl ethyl ketone (MEK), methyl isobutyl ketone (MIBK), trichloroethylene, tetrachloroethylene, crystalline silica, and particulates. Medical interviews were conducted to relate worker exposure with health effects.

Results of this evaluation indicated that, on the days of sampling, several employees were overexposed to xylene, toluene, crystalline silica, and a mixture of organic compounds. Time-weighted average concentrations ranged up to 480 parts per million (ppm) for xylene and 120 ppm for toluene. The recommended maximum level for both is 100 ppm. Additive exposure of these and other organic compounds reached 469% of the recommended maximum exposure. Breathing-zone concentrations of respirable crystalline silica reached 0.5 milligrams per cubic meter of air (mg/M^3), a level 10 times the NIOSH-recommended maximum of 0.05 mg/M^3. The most common physical symptoms exhibited by employees included shortness of breath, cough, headache, mucous membrane and eye irritation, and light-headedness. These symptoms were consistent with overexposure to the organic compounds. Procedures for working in confined spaces and for use of respiratory protection were not adequate.

Based on the data collected during this evaluation, NIOSH found that a health hazard did exist at Protective Coatings Corporation due to overexposure to solvents and silica. Measured exposures to workers were several times the recommended maximum levels. Recommendations to reduce personal exposures and improve operating conditions are included in the body of the full report.

KEYWORDS: SIC 3060 (Fabricated Rubber Products), xylene, toluene, crystalline silica, organic compounds, solvents.

HETA 80-041-730
ALASKA HUSKY BATTERY, INCORPORATED
ANCHORAGE, ALASKA

NIOSH INVESTIGATORS:
Arvin Apol, I.H.
Mitchell Singal, M.D., M.P.H.

SUMMARY

On November 30, 1979, the National Institute for Occupational Safety and Health (NIOSH) received a request from the owner of Alaska Husky Battery, Incorporated, to evaluate lead exposure among employees engaged in the manufacture of lead-acid storage batteries.

An environmental/medical survey was conducted on January 7 and 10, 1980. Personal and area air samples were collected for measurement of airborne lead dust and fume. The medical evaluation included employee interviews and blood tests for lead, free erythrocyte protoporphyrin (FEP), and red blood cell (RBC) parameters.

The 8-hour time-weighted average (TWA) breathing-zone air lead concentrations ranged from 41 to 1700 ug/M3. Six of the eight samples exceeded the Occupational Safety and Health Administration (OSHA) (and State of Alaska) standard of 50 ug/M3; four of them exceeded 200 ug/M3 (respiratory protection is currently permitted between 50 to 200 ug/M3, and engineering controls required above 200 ug/M3). These latter four occurred during the pasting operation and were 278, 674, 691, and 1702 ug/M3. The five employee blood lead levels determined by the NIOSH contract laboratory ranged from 30 to 69 ug/dl; in duplicate blood specimens, the NIOSH laboratory measured levels ranging from 41 to 75 ug/dl. (Blood lead levels in people not occupationally exposed to lead are usually 40 ug/dl or lower.) FEP levels ranged from 2000 to 11100 ug/l RBC, all well above the normal range of 220 to 870. There was no evidence of lead-related anemia or of symptomatic lead toxicity.

On the basis of these findings, NIOSH has determined that employees at Alaska Husky Battery, Incorporated, were exposed to hazardous amounts of lead dust and fume. Recommendations on engineering controls, personal hygiene, respirator usage, and medical monitoring are presented in the body of the full report.

KEYWORDS: SIC 3691 (Storage Batteries), lead, lead batteries, free erythrocyte protoporphyrin, FEP.

HETA 80-044-731
ALASKAN BATTERY ENTERPRISES
FAIRBANKS, ALASKA

NIOSH INVESTIGATORS:
Arvin Apol, I.H.
Mitchell Singal, M.D., M.P.H.

SUMMARY

On December 12, 1979, the National Institute for Occupational Safety and Health (NIOSH) received a request from the owner of Alaskan Battery Enterprises to evaluate lead exposure among employees engaged in the manufacture of lead-acid storage batteries.

An environmental/medical survey was conducted January 8-10, 1980. Personal and area air samples were collected for measurement of airborne lead dust and fume. The medical evaluation included employee interviews and blood tests for lead, free erythrocyte protoporphyrin (FEP), and red blood cell (RBC) parameters.

Breathing-zone air lead concentrations ranged from 111 to 1053 ug/M3. All five 8-hour time-weighted average (TWA) air lead levels exceeded the current Occupational Safety and Health Administration (OSHA) (and State of Alaska) standard of 50 ug/M3 (respiratory protection is currently permitted between 50 to 200 ug/M3, and engineering controls required above 200 ug/M3). General area concentrations ranged from 25 to 129 ug/M3. The eight employee blood lead levels determined by the NIOSH contract laboratory ranged from 43 to 87 ug/dl; in duplicate blood specimens, the NIOSH laboratory measured levels ranging from 38 to 75 ug/dl. (Blood levels in people not occupationally exposed to lead are usually less than 40 ug/dl.) FEP levels ranged from 2600 to 10700 ug/l RBC, all well above the normal range of 220 to 870. There was no evidence of anemia or symptomatic lead toxicity at the time of the survey.

On the basis of these findings, NIOSH has determined that employees at Alaskan Battery Enterprise were exposed to hazardous amounts of lead dust and fume. Recommendations on engineering controls, personal hygiene, respirator usage, and medical monitoring are presented in the body of the full report.

KEYWORDS: SIC 3691 (Storage Batteries), lead, lead batteries, free erythrocyte protoporphyrin, FEP.

HETA 78-022-732
HERMETIC AIRCRAFT INSTRUMENT CORPORATION
FARMINGDALE, NEW YORK

NIOSH INVESTIGATOR:
Nicholas Fannick, I.H.

SUMMARY

The National Institute for Occupational Safety and Health (NIOSH) conducted a Health Hazard Evaluation to evaluate the hazards from exposure to mercury vapor in the altimeter testing area and to solvent vapors (naphtha, consisting primarily of hexane and heptane) during parts cleaning at the Hermetic Aircraft Instrument Corporation. No mercury vapor was detected in the altimeter testing area. Direct readings of solvent vapor concentrations were made in the operators' breathing zones using an MSA Combustible Gas Indicator. Airborne concentrations of the solvent vapors were determined to be approximately 130 to 275 parts per million (ppm). Because the operation is performed less than 1 hour per day, the time-weighted average exposure would not exceed either the existing Occupational Safety and Health Administration (OSHA) permissible exposure limit for petroleum naphtha of 500 ppm or the NIOSH-recommended exposure limit of 100 ppm.

No hazard from exposure to mercury or solvent vapors was determined to exist under conditions at the time of this survey. However, based on good industrial hygiene practice, and to assure that exposures to solvent vapors will not exceed existing or recommended limits, recommendations are made to improve the method of operation and to limit the exposure time of any employee to less than 4 hours of spraying time in any 1 day. These recommendations are detailed in the body of the full report.

KEYWORDS: SIC 3728 (Aircraft Parts and Auxiliary Equipment), solvents.

HETA 80-012-734
JAMES G. BIDDLE COMPANY
PLYMOUTH MEETING, PENNSYLVANIA

NIOSH INVESTIGATORS:
Walter Chrostek, I.H.
Michael Donohue, P.A.

SUMMARY

On October 18, 1979, the National Institute for Occupational Safety and Health (NIOSH) received a request from the James G. Biddle Company, Plymouth Meeting, Pennsylvania, for a Health Hazard Evaluation. The request stated that employees were experiencing headaches as a result of exposure to dust generated by machine shop operations. An investigation by company and insurance personnel failed to identify the problem area.

A walk-through evaluation was conducted November 14, 1979. Private, nondirected medical interviews were conducted with the affected employees. An atmospheric evaluation for nuisance dust and lead dust and fume was conducted on January 23, 1980, followed by a medical evaluation for blood lead on January 28, 1980.

The environmental air sampling performed on January 23, 1980, showed that the nuisance dust level was 0.4 milligram per cubic meter of air sampled (mg/M^3), while the lead fume and dust levels ranged from less than the lower limit of detection (2 micrograms/sample) to 14 micrograms per cubic meter of air sampled (ug/M^3).

Blood was drawn from 24 employees. The criterion for blood lead is that any value of lead above 40 micrograms per 100 milliliters (ug/100ml) is considered above normal. The range found in the employees on January 28, 1980, was 6 to 18 ug of lead per 100 ml of whole blood.

On the basis of the data collected in this investigation, NIOSH determined that no hazard existed as a result of exposure to inert dust and lead at the time of the survey.

KEYWORDS: SIC 3825 (Instruments for Measuring and Testing of Electricity and Electrical Signals), lead, lead dust and fume, nuisance dust, blood lead.

HETA 79-154-735
SUPERMARKETS GENERAL, INCORPORATED
WOODBRIDGE, NEW JERSEY

NIOSH INVESTIGATOR:
Nicholas Fannick, I.H.

SUMMARY

In September 1979, the National Institute for Occupational Safety and Health received a request from Supermarkets General, Incorporated, to investigate a case of irritation and disorientation associated with use of a company automobile.

On September 28, 1979, a representative of NIOSH interviewed the employee to whom the automobile had been assigned. From the onset of use of the automobile, he had complained of headaches, nausea, disorientation, and difficulty breathing, which began upon entering the auto, even before the ignition had been started. The employee had no history of allergies, and did not exhibit similar symptoms in other automobiles or anywhere else. The symptoms were relieved after leaving the automobile.

Samples were collected on September 28, 1979, and April 17, 1980, to evaluate airborne contaminents inside the passenger compartment. The samples for organic contaminents were analyzed by NIOSH's standard gas chromatographic method. Traces of the following chemicals were detected: xylene, toluene, trimethyl benzene, high molecular weight phenyl alkanes (such as phenyl undecanes and phenyl dodecanes), and, tentatively, 2,6 di-tertirary butyl para benzoquinone and di-tertiary ethyl phenone. All of these compounds were found in extremely small amounts. Toluene, the most abundant, was present in concentrations less than 0.05 microgram per cubic meter of air. No formaldehyde was detected. No carbon monoxide or oxides of nitrogen were detected. Carbon dioxide concentrations were well within acceptable limits.

Except in a highly sensitive individual, the concentrations of chemicals detected were less than would be expected to produce the degree of clinical effects which occured in this case. The abatement of symptoms with time, despite continued exposure in the automobile, suggests that the etiological factors in this case were chemicals which out-gassed from the plastics in the passenger compartment, and which were gradually being reduced with time.

KEYWORDS: SIC 5411 (Grocery Stores), toluene, carbon monoxide, plastics, headache, nausea.

HETA 78-079-736
CISSELL MANUFACTURING COMPANY
LOUISVILLE, KENTUCKY

NIOSH INVESTIGATORS:
Paul Pryor, I.H.
Frank Stern, Epidemiologist

SUMMARY

In April 1978, the National Institute for Occupational Safety and Health (NIOSH) received a request for a Health Hazard Evaluation at the Cissell Manufacturing Company in Louisville, Kentucky. The request specified the following potential toxic exposures: for welders--ozone, fluorides, nitrogen dioxide, iron oxide, manganese, chromium, and total fume; for solders--lead fumes; for paint sprayers--naptha, isobutyl isobutyrate, methyl-n-butyl ketone, isobutyl acetate, isobutyl alcohol, toluene, and xylene; for electroplaters--hydrochloric acid, hexavalent chromium, cadmium, and cyanide; for degreasing operators--1,1,1-trichloroethane; and for pattern cutters, sewers, and packers--asbestos.

During the initial phase of the survey, concern was expressed over a suspected excessive death rate due to cancer in the work population at Cissell.

To evaluate these problems, NIOSH conducted an industrial hygiene and epidemiologic evaluation. Personal and area samples were obtained during July 1978, and January 1979. Other evaluations included analysis of bulk samples, evaluation of several exhaust and make-up ventilation systems, and personal interviews with selected employees. The epidemiologic evaluation consisted of reviewing medical and personnel records, collecting demographic data (e.g., age, sex, date of birth, length of employment, etc.), occupational histories, turnover rates, and years of potential exposure.

During the epidemiologic evaluation, NIOSH found that only 3 of the 10 suspected cancer deaths were, in fact, deaths from cancer (2 lung cancer and 1 nasopharynx cancer) and none appeared to be work related.

None of the operations evaluated produced exposures above the NIOSH-recommended criteria, except for asbestos. The asbestos values ranged from 0.19 to 0.30 fibers per cubic centimeter, and these were one to three times the present standard.

Based on the data obtained in this investigation, NIOSH determined that a potential health hazard did exist for workers exposed to asbestos at the Cissell Manufacturing Company in Louisville, Kentucky. NIOSH also determined that a number of work practices and exhaust ventilation problems existed. No cause/effect relationship was established for the three cancer deaths of workers at Cissell, and the cause is not thought to be of occupational origin.

Recommendations to limit employee exposures to asbestos, improve exhaust ventilation, and institute better work practices are included in the body of the full report.

KEYWORDS: SIC 3633 (Laundry Machinery, Household and Coin-operated), asbestos, welding, soldering, paint spraying, electroplating, degreasing, pattern cutters.

HETA 80-114-737
POTOMAC PHOTO SUPPLY
WASHINGTON, D.C.

NIOSH INVESTIGATOR:
John Love, I.H.

SUMMARY

On April 22, 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request from the employees of Potomac Photo Supply for a Health Hazard Evaluation. This request expressed concern that the employees were possibly being exposed to airborne asbestos from the building insulation. Potomac Photo Supply is a retail distributor of cameras and accessories. General area air samples were obtained on May 18, 1980, in various parts of the stockroom and storage areas, in addition to a bulk sample of the insulation/fireproofing. None of the six air samples taken contained asbestos dust exposures that were over either the NIOSH-recommended criterion of 0.1 fibers per cubic centimeter (fibers/cc) or the Occupational Safety and Health Administration (OSHA) standard of 2 fibers/cc. However, analysis of the bulk sample did indicate the presence of about 40% to 60% amosite asbestos.

On the basis of the data obtained in this investigation, NIOSH determined that no hazardous exposure to asbestos existed at the time of this survey. Recommendations on further control are incorporated in the body of the full report.

KEYWORDS: SIC 5946 (Camera Shops, Retail), asbestos, insulation.

HETA 78-016-738
NEW YORK TELEPHONE
NEWBURG, NEW YORK

NIOSH INVESTIGATOR:
Nicholas Fannick, I.H.

SUMMARY

The National Institute for Occupational Safety and Health (NIOSH) received a request to investigate fumes generated during soldering connections at a central telephone master switchboard. Analysis of charcoal tube samples collected in the breathing zone of the (switchboard) rack attendant at the New York Telephone facility revealed no detectable contaminants. The sampling was performed under conditions involving more potential exposure than would be encountered under normal working conditions.

Based on the analysis of samples collected as part of this investigation, NIOSH determined that no hazard from exposure to contaminants generated during soldering of line installations existed at New York Telephone during the dates of this survey.

KEYWORDS: SIC 3661 (Telephone Central Office Equipment), soldering fumes, air contaminants.

HETA 78-090-739
FMC CORPORATION
SPECIALTY CHEMICALS DIVISION
NITRO, WEST VIRGINIA

NIOSH INVESTIGATORS:
Dawn Tharr, I.H.
Mitchell Singal, M.D., M.P.H.

SUMMARY

In May 1978, the National Institute for Occupational Safety and Health (NIOSH) received a request from an authorized representative of employees to evaluate the exposure of Mechanical Department workers at the FMC plant in Nitro, West Virginia, to phosphorus trichloride and phosphorus oxychloride. Workers were reportedly experiencing respiratory problems due to exposures while working on equipment.

Environmental samples for phosphorus trichloride and phosphorus oxychloride were collected on the phosphorus trichloride/phosphorus oxychloride operators, two tank yard workers, and one maintenance employee on May 23 and 24, 1979. All air sample results for phosphorus trichloride and phosphorus oxychloride were below the lower analytical limit of detection, with two exceptions: (1) a tank yard operator was exposed to approximately 6 mg/M^3 of phosphorus trichloride during a 1-hour truck loading operation, and (2) a maintenance employee was exposed to approximately 4 mg/M^3 of phosphorus oxychloride during the pulling off of a pump in a 25-minute period. Upon calculation of an 8-hour time-weighted average concentration, the tank yard operator was not found to be exposed above the evaluation criterion of 3 mg/M^3 for phosphorus trichloride. No evaluation criterion exists for phosphorus oxychloride.

The medical study included a questionnaire and pulmonary function tests on 37 exposed and 22 unexposed employees. Exposed employees had a significantly higher prevalence (65%) of occasional respiratory discomfort than unexposed employees (5%), but no consistent association between pulmonary function paramenters and exposure to phosphorus trichloride/phosphorus oxychloride could be documented.

The data from this study suggest that there are intermittent exposures to phosphorus trichloride/phosphorus oxychloride which can cause acute respiratory symptoms. Recommendations concerning respiratory protection are provided in the body of the full report.

KEYWORDS: SIC 2822 (Chemicals, Organic and Inorganic--Bulk), phosphorus trichloride, phosphorus oxychloride, pulmonary function, respiratory symptoms.

HETA 79-019-740
RADFORD ARMY AMMUNITION PLANT
RADFORD, VIRGINIA

NIOSH INVESTIGATORS:
Walter Chrostek, I.H.
Elva Elesh, M.D.

SUMMARY

In November 1978, the National Institute for Occupational Safety and Health (NIOSH) received a request from an authorized representative of employees at the Radford Army Ammunition Plant in Radford, Virginia, to evaluate employee exposures to various substances used in the plant. Employee exposures were reportedly resulting in an increased incidence of heart disease, high blood pressure, and respiratory disease.

The NIOSH evaluation of employee exposures was based on a review of the results of environmental samples collected by the Occupational Safety and Health Administration (OSHA) on February 6-23, 1979, and June 18, 1979. Environmental samples were collected for ethyl ether, n-butyl acetate, acetone, ethanol, nitroglycerin, coal dust, lead, coal tar pitch volatiles, and dinitrotoluene.

Ethyl ether concentrations were found to range from 90 to 712 ppm. Five of the 13 samples collected exceeded the permissible exposure level (PEL) of 400 ppm. Three samples taken for n-butyl acetate had concentrations ranging from 28 to 90 ppm (PEL--200 ppm). Acetone levels on three samples ranged from 55 to 174 ppm (PEL--250). Ethanol exposures ranged from 121 to 353 ppm (PEL--1000 ppm). Nine samples collected for nitroglycerin showed concentrations from nondetectable to 0.89 mg/M3 (PEL--0.1 mg/M3). Coal dust concentrations were found to range from 0.17 to 0.78 mg/M3 (PEL--2 mg/M3) and lead levels from nondetectable to 0.063 mg/M3 (PEL--0.05 mg/M3). Two samples for coal tar pitch volatiles had concentrations of nondetectable and 0.2 mg/M3, respectively (PEL--0.1 mg/M3). Four samples for dinitrotoluene showed levels from 0.3 to 0.9 mg/M3 (PEL--1.5 mg/M3).

The medical interviews and record review revealed several cases of previously diagnosed asbestosis and heart disease.

Based on the environmental sampling results, NIOSH determined that a potential health hazard existed as a result of employee exposures to ethyl ether, nitroglycerin, lead, and coal tar pitch volatiles. Recommendations to help alleviate these hazards are found in the body of the full report. A more complete evaluation of the occupational health hazards at Radford Army Ammunition Plant will be made available when the current NIOSH mortality study at that plant is complete.

KEYWORDS: SIC 3483 (Ammunition), ethyl ether, n-butyl acetate, acetone, ethanol, nitroglycerin, coal dust, lead, coal tar pitch volatiles, dinitrotoluene.

HETA 80-029-741
STORAGE TECHNOLOGY CORPORATION
LOUISVILLE, COLORADO

NIOSH INVESTIGATORS:
Bobby Gunter, Ph.D., I.H.
Joann Schloemer, R.N., M.Ed.

SUMMARY

In November 1979, the National Institute for Occupational Safety and Health (NIOSH) received a request from Storage Technology Corporation, Louisville, Colorado, to evaluate occupational exposures to methylene bisphenyl isocyanate (MDI), N-methyldicyclohexylamine (MCHA), and diethylene glycol monoethyl ether at their facilities at Boulder and Broomfield, Colorado. These facilities are engaged in the manufacture of computer data storage subsystems. Workers in these areas used polyurethane foam systems for packaging the computer subsystems and electronic components prior to shipment. Each worker was monitored for breathing-zone air concentrations of MDI, MCHA, and diethylene glycol monoethyl ether. General room air samples were also obtained for these chemicals. Since MDI and MCHA are respiratory irritants, pre- and post-shift pulmonary function testing was performed. Workers were also administered a brief medical questionnaire. Environmental evaluation illustrated that workers were not overexposed to air contaminants. Ventilation was adequate and proper work techniques were used. Medical data did not show any abnormal changes in pre- and post-shift pulmonary function testing.

On the basis of the environmental and medical data gathered in this investigation, NIOSH concluded that a health hazard did not exist at Storage Technology Corporation at the time of this survey from exposure to methylene bisphenyl isocyanate, methyldicyclohexylamine, or diethylene glycol monoethyl ether. Recommendations on work practices necessary to control any future hazard are included in the body of the full report.

KEYWORDS: SIC 3670 (Electronic Components and Accessories), methylene bisphenyl isocyanate. MDI, N-methyldicyclohexylamine, MCHA, diethylene glycol monoethyl ether, pulmonary function testing, respiratory irritation.

HETA 80-150-742
STAINLESS EQUIPMENT COMPANY
ENGLEWOOD, COLORADO

NIOSH INVESTIGATOR:
Paul Pryor, I.H.

SUMMARY

In May 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request to evaluate the potential exposure to titanium (in titanium sponge form) at Stainless Equipment Company, Englewood, Colorado. The titanium is annealed by two operators and the concern was that they, as well as other workers in the immediate area, were being exposed to titanium dioxide. The request originated out of one employee's medical problems which included occasional headaches and stomach disorders.

Personal time-weighted average (TWA) exposures were determined for two titanium operators over a 2-day period in June 1980. Area samples were taken on both days around the annealing machine and other areas associated with the operation. Bulk samples were collected of the raw unannealed material. These bulks included samples of unannealed material from previous batches which were suspected of producing irritation.

Both personal and area samples were well below the American Conference of Governmental Industrial Hygienists (ACGIH) recommended exposure level and the Occupational Safety and Health Administration (OSHA) standard of 10 mg/M3 and 15 mg/M3, respectively.

On the basis of the data obtained in this investigation, NIOSH determined that exposures to annealing operators at Stainless Equipment Company were below applicable exposure criteria for titanium. Therefore, based on the results of this investigation, no hazard to health was believed to have existed at the time of the survey. However, recommendations concerning medical problems and improved work practices to control potential hazards are included in the body of the full report.

KEYWORDS: SIC 3490 (Miscellaneous Fabricated Metal Products), titanium, annealing machine, environmental control chambers.

HETA 80-056-743
(REVISED)
ST. ANTHONY'S HOSPITAL
DENVER, COLORADO

NIOSH INVESTIGATORS:
Bobby Gunter, Ph.D., I.H.
Arthur Watanabe, Dr.Pharm.

SUMMARY

In March 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request from employees to evaluate exposures to nitrous oxide, ethrane, and halothane in the Department of Surgery at St. Anthony's Hospital, Denver, Colorado. Breathing-zone and general room air samples were taken on nurses and anesthesiologists for nitrous oxide, ethrane, and halothane. All the anesthesiologists' equipment was monitored during surgical procedures for leakage. This monitoring was done by portable infra-red analyzer. A medical history was taken on most surgical personnel.

Seven of 21 ethrane air samples (33%) exceeded the NIOSH evaluation criterion of 0.5 parts per million (ppm). Ethrane concentrations ranged from less than 0.01 ppm to 1.6 ppm. None of the 21 halothane air samples exceeded the NIOSH evaluation criterion of 0.5 ppm. Values ranged from less than 0.01 ppm to 0.4 ppm. Nitrous oxide breathing-zone air samples exceeded the NIOSH evaluation criterion in approximately 50% of the samples taken. (Range was from 5.0 to 128.0 ppm; NIOSH criterion is 25 ppm for a time-weighted average concentration during the period of anesthetic administration.)

A self-administered questionnaire directed at waste anesthetic gas health effects was given to operating and recovery room staff. Twenty-five (44%) of the operating room respondents reported acute symptoms versus fifteen (79%) recovery room respondents. This difference was statistically significant. Those with acute symptoms did not differ with respect to smoking status and job duration. Analysis by job-specific rates for chronic disease and reproductive effects revealed numbers too small for statistical evaluation. However, the number of miscarriages reported were less than that expected for this small a female worker group.

On the basis of the environmental and epidemiological data gathered during this investigation, NIOSH concluded that a health hazard existed in the operating and recovery rooms at St. Anthony's Hospital from overexposures to ethrane and nitrous oxide. Recommendations on work practices and ventilation necessary to control these hazards are included in the body of the full report.

KEYWORDS: SIC 8062 (General Medical and Surgical Hospitals), nitrous oxide, ethrane, halothane, anesthetic gases, reproductive effects, miscarriages, acute symptoms.

HETA 80-038-744
LONGMONT TURKEY PROCESSORS, INCORPORATED
LONGMONT, COLORADO

NIOSH INVESTIGATORS:
Paul Pryor, I.H.
Mitchell Singal, M.D., M.P.H.

SUMMARY

In December 1979, the National Institute for Occupational Safety and Health (NIOSH) received an employer request to evaluate chest tightness and breathing difficulties at Longmont Turkey Processors, Longmont, Colorado. The request originated from an employee's medical problems suspected to be an allergic reaction to dust in the work environment. The request specified that approximately 30 administrative personnel were potentially exposed to toxic dust generated from turkey feathers.

NIOSH conducted an industrial hygiene evaluation January 17-18, 1980. Other factors evaluated in this study included analysis of the ventilation system, description of the normal work routine of the employee who suffered the allergic problems, and individual environmental monitoring of the areas in question. None of the areas evaluated in this study produced exposures above the evaluation criterion of 10 mg/M3 for total particulate (nuisance dust) exposure. It should be recognized that there is no criterion for dust containing feather particulates which may produce one of two types of allergic reactions in susceptible individuals: (1) upper respiratory/asthmatic syndrome or (2) an allergic alveolitis-type reaction.

Based on the data obtained in this investigation, NIOSH determined that a health hazard did not exist to workers exposed to total particulate dust. However, there is a segment of the general population whose allergic reaction to pollens, foods, dust, etc. should be recognized and measures taken to reduce and/or eliminate immunologic responses for susceptible persons. Therefore, it is believed that an exposure did and could occur to a suspectible person, i.e., a person may become reactive while working in an environment. Recommendations to limit employee exposure are included in the body of the full report.

KEYWORDS: SIC 2010 (Meat Products), allergic problems, allergic alveolitis, upper respiratory/asthmatic syndrome, turkey feathers, immunologic responses.

HETA 80-085-745
PACIFIC GAS AND ELECTRIC COMPANY
OAKLAND, CALIFORNIA

NIOSH INVESTIGATORS:
Paul Pryor, I.H.
Pierre Belanger, I.H.

SUMMARY

In February 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request for a Health Hazard Evaluation at the Pacific Gas and Electric Company (PG&E), East Bay Division, Oakland, California. The request originated from employees' concerns for potential health effects, both short- and long-term, from polychlorinated bipheyl (PCB) exposure while servicing transformers and capacitors. The request specified that all linemen, as well as a special emergency crew (East Bay Division specialist crew for handling PCBs) were potentially exposed to PCBs during routine line work, inspections, spills, explosions, clean-up, etc.

NIOSH conducted an industrial hygiene evaluation on March 27, 1980. At the March meeting, NIOSH met with PG&E and employee representatives who were responsible for procedures for handling PCBs and information was exchanged regarding the company's present position on PCBs. This information, as well as information collected from the requestor and a review of the pertinent literature regarding PCBs, were used to determine the effectiveness of PG&E's polychlorinated biphenyls program.

Based on the data obtained in this evaluation, NIOSH determined that Pacific Gas and Electric Company's East Bay Division program for maintenance and emergency handling of PCBs should afford workers reasonable protection from health hazards due to potential PCB exposures. However, there are certain areas in Pacific Gas and Electric's PCB program which need to be improved. These include an improved respiratory protection program, environmental monitoring, medical surveillance, additional training and education, and an improved sanitation practice program for those employees who handle PCBs. Recommendations to further assure employee protection against possible PCB exposures are included in the body of the full report.

KEYWORDS: SIC 8611 (Public Utility Associations), polychlorinated bipheyls, PCB, transformers, capacitors.

HETA 79-080-746
COBE LABORATORIES, INCORPORATED
LAKEWOOD AND ARVADA, COLORADO

NIOSH INVESTIGATORS:
Dawn Tharr, I.H.
Michael Donohue, P.A.

SUMMARY

A Health Hazard Evaluation was conducted by the National Institute for Occupational Safety and Health (NIOSH) at Cobe Laboratories, Incorporated, in Lakewood and Arvada, Colorado, on August 13-15, 1979, to evaluate complaints of skin and eye irritation, breathing difficulties, and headaches.

Personal breathing-zone and area samples were collected for the numerous chemical materials used in the production and assembly operations. Analysis of the environmental samples indicated the presence of isopropyl alcohol, cyclohexanone, tetrahydrofuran (THF), toluene, methyl ethyl ketone (MEK), ethylene oxide, and Freon 12. Measured concentrations of these substances were all below NIOSH- and OSHA-recommended permissible exposure limits (PEL). Samples collected for toluene diisocyanate (TDI) and methylene bisphenyl isocyanate (MDI) showed no detectable levels. Environmental samples collected for methylene chloride revealed concentrations ranging from 15 parts per million (ppm) to 187 ppm (PEL--74 ppm). Measured ethylene dichloride levels ranged from 1.5 ppm to 32 ppm (PEL--1 ppm). Samples collected for perchloroethylene indicated concentrations ranging from 7 ppm to 29 ppm. (Because of the carcinogenic potential, NIOSH recommends that exposure to perchloroethylene be kept as low as possible.)

The medical evaluation was accomplished by completing a standard medical questionnaire with 140 Cobe employees. This questionnaire was designed to evaluate the cardiovascular, respiratory, and central nervous systems as well as skin. Review of these questionnaires delineated breathing difficulties primarily affecting workers laboring as assemblers on various lines. Of the responders (21 of 103), 20% complained of wheezing in the absence of any cold symptoms. Wheezing occurred most days, as much as 3 months each year. Twenty percent (24 of 118 responders) complained of chronic shortness of breath. Persistent cough was a complaint of 22% (31 of 140 responders). Within the past 6 months, 50% (71 of 140 responders) reported headaches of sufficient intensity to require minor pain relievers. No appreciable prevalence of eye/skin irritation, tumors, anemic blood disorders, or neurologic problems was noted.

Based on the environmental sample results, employee interviews, and available toxicological information, NIOSH determined that a potential health hazard existed at Cobe Laboratories, Incorporated, as a result of employees' exposures to methylene chloride, ethylene dichloride, and possibly perchloroethylene. The medical findings of respiratory complaints may, in some part, be attributable to current and past chemical exposures of workers at Cobe Laboratories. Due to the job shuffling of assembly line workers, no particular chemical substance nor work area responsible for these ill health effects could be determined. Recommendations for reducing exposured are included in the body of the full report.

KEYWORDS: SIC 3840 (Surgical, Medical, and Dental Instruments and Supplies), methylene chloride, ethylene dichloride, perchloroethylene, isopropyl alcohol, cyclohexanone, tetrahydrofuran, toluene, methyl ethyl ketone, ethylene oxide.

HETA 80-067-749
FIRESTONE TIRE AND RUBBER COMPANY
AKRON, OHIO

NIOSH INVESTIGATOR:
James D. McGlothlin, I.H.

SUMMARY

In February 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request from the United Rubber Workers Union, Local 7, to evaluate potential worker exposure to volatilized N-Nitrosamines at the Firestone Tire and Rubber Company, Akron, Ohio. In April 1980, NIOSH conducted an environmental survey in which 13 process air samples were collected for N-Nitroso compounds. Volatile N-Nitrosomorpholine (NMOR), N-Nitrosodimethylamine (NDMA), and N-Nitrosodiethylamine (NDEA) were detected in air samples collected during the NIOSH survey. The nitrosamine levels were highest during the extrusion process of racing tire components: NMOR was detected at 1.62 micrograms per cubic meter (ug/M3), NDMA at 1.02 ug/M3, and NDEA at 0.48 ug/M3. The average level for all N-nitroso compounds measured during this survey was 0.25 ug/M3.

While the nitrosamine compound levels detected in this plant were consistent with previous levels found in other tire plants, the average level was considerably lower and may reflect chemical formulations which do not generate high nitrosamine levels. Although no standard or recommended standard exists for airborne nitrosamine exposure, they are considered, as a class, potential animal carcinogens. Therefore, volatilized nitrosamines should be kept to a minimum as a prudent preventive disease measure. Recommendations to do this are contained in the body of the full report.

KEYWORDS: SIC 3010 (Tire Manufacturing), N-nitrosamines, N-nitrosodimethylamine, N-nitrosomorpholine, N-nitrosodiphenylamine, N-nitrosodiethylamine.

HETA 80-109-750
BEAVER SHOE COMPANY
DIVISION OF KINNEY SHOE CORPORATION
BEAVER SPRINGS, PENNSYLVANIA

NIOSH INVESTIGATORS:
Walter Chrostek, I.H.
Mitchell Singal, M.D., M.P.H.

SUMMARY

On April 7, 1980, NIOSH received a request from the employees of Beaver Shoe Company for a Health Hazard Evaluation. The request expressed concern about the toxicity of the solvents and cements used in the manufacturing of shoes.

An initial walk-through survey, during which nondirected medical questionnaires were administered to the sole and bottom cementers and the treeing operators, was conducted on April 29 and 30, 1980. There were 20 employees engaged in operations where there was an exposure to solvents and cements. Personal air samples to determine worker exposure to solvent mixtures were collected on July 8 and 9, 1980.

Analysis of the 17 samples collected at the cementing and treeing operations indicated that there was an employee overexposure to acetone, methyl ethyl ketone (MEK), and toluene mixtures at the sole and bottom cementing operations. As calculated by the formula for mixtures, five samples exceeded the NIOSH-recommended standard of 1.01 to 1.79 parts per million.

Eighteen employees were interviewed, 10 cementers and 8 blemish removers. All but one of the interviewees were women. Five of the eight blemish removers reported some work-related health problems (four currently, one only in the past), all attributed to solvents. Two persons reported dermatitis; the others reported mucous membrane irritation, headache, or unspecified symptoms. Six of the 10 cementers reported work-related health problems, mostly eye or mucous membrane irritation. Symptoms in both groups were compatible with substances to which the employees were exposed (predominantly acetone, methyl ethly ketone, and toluene).

On the basis of the data obtained in this investigation, NIOSH determined that a health hazard from overexposure to organic solvent vapors (acetone, MEK, and toluene) did exist at the sole and bottom cementing operations of the Beaver Shoe Company. Recommendations, along with a discussion of work practices, have been incorporated into the body of the full report as a guide in controlling exposure to the organic solvents at the sole and bottom cementing operations.

KEYWORDS: SIC 3144 (Women's Footware), acetone, MEK, toluene, hexane, methyl isobutyl ketone, dermatitis, mucous membrane irritation, headache, unspecified symptoms.

HETA 79-017-751
RMI METALS REDUCTION PLANT
ASHTABULA, OHIO

NIOSH INVESTIGATORS:
Clifford Moseley, I.H.
David Garabrant, M.D.
Lawrence Fine, M.D.

SUMMARY

On October 30, 1978, the Oil, Chemical, and Atomic Workers International Union requested a Health Hazard Evaluation of workers at RMI Metals, Ashtabula, Ohio, who were involved in titanium sponge metal production. This study was requested because of a reported high incidence of pulmonary fibrosis among these workers.

NIOSH conducted two site visits on January 8-9 and June 25-28, 1979, in order to conduct environmental sampling and perform a medical evaluation of the work population. Personal and area air sampling for airborne contaminants along with a review of work practices and working conditions were performed. Work and health history questionnaires and physical exams, including pulmonary function tests and chest X-rays, were administered to selected workers.

With the exception of one total particulate and two respirable particulate samples, air sampling for titanium, considered as a nuisance particulate, showed concentrations to be below published criteria. The three samples that exceeded recommended exposure criteria were 11.6 mg/M3 for total nuisance dust, and 6.6 and 7.0 mg/M3 for respirable nuisance particulate. Samples for welding fume and hydrochloric acid were below recommended criteria. Airborne asbestos was not detected.

The medical study revealed a high prevalence of chest X-ray and pulmonary function abnormalities. Production and non-production workers showed different patterns of X-ray changes. Extensive pleural thickening was present in 16% of the 58 non-production workers (maintenance, service, etc.), and was most prevalent among those who had worked at RMI for at least 10 years. Limited pleural thickening was found in 14% of the 151 production workers employed between 1957 and 1968. The major pulmonary function changes were among the titanium tetrachloride reduction process workers who showed restrictive pulmonary changes with a significant yearly loss of lung volume (45 cc/year) even when adjusted for the effects of smoking.

On the basis of the data collected during this evaluation, a health hazard of pulmonary impairment existed at RMI. Although the environmental and medical data could not clearly identify a cause, past exposure to asbestos and past and/or current exposure to titanium compounds appear to be most likely responsible for the pulmonary impairment. Recommendations concerning limiting employee exposures to workplace contaminants and the development of an environmental and medical surveillance program are presented in the body of the full report.

KEYWORDS: SIC 3339 (Titanium Sponge), titanium, titanium tetrachloride, asbestos, welding fumes, pulmonary disease, pleural thickening.

HETA 80-159-752
MOUNTAIN BELL
DENVER, COLORADO

NIOSH INVESTIGATOR:
Paul Pryor, I.H.

SUMMARY

In May 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request from an employer representative to evaluate the potential exposure to ammonia at Central Staff Communications Laboratory (COM-LAB), Mountain Bell, Denver, Colorado. The ammonia (anhydrous) was used in duplicating machines and approximately 30 employees worked in this area.

During August 1980, personal and area time-weighted average (TWA) exposures to ammonia were determined at various duplicating operations in the COM-LAB department.

Mountain Bell had recently installed new exhaust ventilation systems in this department and they were evaluated to determine their ability to remove the contaminant from the areas in question. Both personal and area samples were well below (1.0 - 5.5 parts per million - ppm) the NIOSH and OSHA evaluation criterion of 50 parts per million for ammonia.

On the basis of the data obtained in this evaluation, NIOSH determined that exposures to the duplicating operators, as well as the other employees in this department, were below the applicable exposure criterion for ammonia. NIOSH also determined that the exhaust ventilation systems in each of the areas evaluated were operating effectively. Finally, the safety and health procedures program developed by Mountain Bell is very complete and should provide adequate information to safeguard the health of those employees who work in this department against potential ammonia exposures.

KEYWORDS: SIC 7330 (Mailing, Reproduction, Commercial Art and Photography, and Stenographic Services), duplicating machines, microfilm, microfiche, ammonia.

HETA 80-079-753
U.S. POSTAL INSPECTION SERVICE
ATLANTA, GEORGIA

NIOSH INVESTIGATOR:
Stanley Salisbury, I.H.

SUMMARY

In May 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request for technical assistance from the U.S. Postal Inspection Service, Atlanta, Georgia. NIOSH was asked to evaluate the effectiveness of ventilation systems designed to control lead exposures in a newly constructed firing range at an Atlanta Postal Service building.

The range was a fixed shooter/movable target design with five shooting stalls. An enclosed booth for the Rangemaster was located at the rear of the range. Fresh air was supplied from louvered ceiling vents behind the firing line and contaminated air was exhausted from ceiling vents in two locations: (a) just in front of the firing line and (b) above the bullet trap.

An environmental survey was conducted June 18, 1980, the first day that the range was used. Four of five firing stalls were in use. Atmospheric samples for lead were collected by both general area and personal sampling techniques. Ventilation measurements were made by checking air velocity through each of the five firing stalls.

Analysis of filter samples indicated that lead exposure for personnel firing handguns exceeded the 50 ug/M3, 8-hour time-weighted average (TWA) Occupational Safety and Health Administration (OSHA) permissible exposure limit. Lead exposure during the first period of qualification (4 shooters) averaged 73.5 ug/M3, and during the second period (4 shooters) 92 ug/M3. Eight-hour TWA's (assuming zero exposure when not firing weapons) ranged from 57 ug/M3 to 115 ug/M3. Air movement down range beyond the stalls was almost nonexistent because the exhaust vent above the bullet trap was poorly designed. Air flow through the firing stalls was less than 30 feet per minute (FPM). NIOSH recommends at least 50 FPM.

On the basis of the data obtained in this investigation, NIOSH determined a hazard from overexposure to airborne lead did exist at the time of this survey and that the ventilation systems were inadequate. Accordingly, recommendations for improving the ventilation system have been incorporated into the body of the full report.

KEYWORDS: SIC 9999 (Not Otherwise Classified), indoor firing range, lead, ventilation.

HETA 80-067-754
CONGRESSMAN CAVANAUGH'S OFFICE
WASHINGTON, D.C.

NIOSH INVESTIGATOR:
Richard Gorman, I.H.

SUMMARY

In April 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request for technical assistance from Congressman Cavanaugh to evaluate exposure of his staff to emissions from a Qwip Systems Model 1200 Facsimile Recorder at his office in Washington, D.C. Respiratory discomfort, eye irritation, and obnoxious odors were the primary complaints, and there was also a concern that the emissions may contain substances that have carcinogenic potential. NIOSH responded to this request by reviewing emission studies provided by the manufacturer and conducting a field survey on July 16 and 17. Resulting data indicated that the odor was probably the result of the presence of low concentrations (0.4 ppm) of n-butyl-methacrylate. Other substances identified in bulk air samples were not detectable in exposure samples but may have contributed (additive effects), along with the n-butyl-methacrylate, to occasional respiratory discomfort (dryness in the throat) in two of the five employees.

The Qwip unit was found to generate small particles in concentration ranges of 0.11 to 0.19 mg/M3 in the immediate vicinity of the unit. These particulates were probably responsible for the eye irritation and cloudy vision experienced by the two employees who wore contact lenses. The particulates were not found to contain a benzene soluble fraction or detectable amounts of five polynuclear aromatic hydrocarbons: benzo(a)anthracene, chrysene, pyrene, benzo(a)pyrene, and flouoranthene. There were no substances detected that have been associated with carcinogenicity in animals or humans. Carbon monoxide levels were stable at 5 ppm and not appreciably affected by the operation of the Qwip unit.

Exposure to the emissions of the Qwip Facsimile Recorder, as evaluated during this investigation, would not be expected to cause a health hazard; however, respiratory discomfort, eye irritation, and the presence of a disagreeable odor were experienced due to the placement and use of the unit in a poorly ventilated corner of the office. More significant respiratory problems may result from operation of this equipment in a non-ventilated or very poorly ventilated area due to expected increases in airborne concentrations of the n-butyl-methacrylate and other thermal decomposition products of the paper.

Employee complaints were resolved by relocating the unit to a better ventilated area of the office as recommended by the NIOSH investigator at the time of the field survey. The manufacturer has been aware of the situation and has arranged to have a health notice included in each box of paper. There is also an ongoing research effort to obtain a replacement paper.

KEYWORDS: SIC 9160 (Federal Government), Qwip Facsimile Recorder, electrosensitive paper, electro-thermal printing, n-butyl-methacrylate, polynuclear aromatic hydrocarbons.

HETA 80-072-755
FEDERAL RESERVE BRANCH BANK
BIRMINGHAM, ALABAMA

NIOSH INVESTIGATOR:
Stan Salifbury, I.H.

SUMMARY

In May 1980, the National Istitute for Occupational Safety and Health (NIOSH) received a request from the Federal Reserve Bank of Atlanta for technical assistance in evaluating the effectiveness of revised administrative and engineering controls designed to control lead exposure in an indoor firing range located in the basement of the Birmingham Branch Bank.

The range was a long, narrow room that could accomodate only two firing positions. Targets were fixed in position requiring shooters to move down range to fire at closer range targets. The range was used for firing .38 caliber pistols, shotguns, and .44 magnum carbines. A new type, non-lead alloy .38 caliber ammunition was used during the survey. Fresh air was supplied through ceiling vents behind the firing line and exhaust air was pulled through slot vents above and left of the target barrier.

For the purpose of evaluating airborne lead exposure, a survey was conducted on July 30, 1980. Both personal and general area samples for airborne lead were collected and analyzed in accordance with NIOSH Analytical Method No. S-341. Air flow measurements were also taken to check the range ventilation system.

Analysis of the filter samples indicated that no significant lead exposure occured. Only one of nine samples contained a measureable amount of lead on the filter. This sample was an area sample of down range air and the amount detected on the filter was not significant, only 6 micrograms (ug). No lead was found on any of the personal exposure samples. This is explained by the fact that bullets fired from the pistols were made of zinc, not lead. This fact was confirmed by laboratory analysis of a fired bullet which found 94% zinc and only 0.06% lead. Range ventilation was good with 75 feet of air per minute (FPM) through the left side stall and 140 FPM through the right stall.

On the basis of the data obtained in this investigation, NIOSH determined a hazard from lead exposure did not exist during this survey. The use of zinc ammunition appears to be an effective control method for preventing lead exposure in indoor firing ranges. Further evaluation of this type ammunition is currently under investigation by NIOSH.

KEYWORDS: SIC 9999 (Not Otherwise Classified), indoor firing range, lead, zinc bullets, non-lead alloy ammunition.

HETA 80-105-757
LEXINGTON HERALD-LEADER
LEXINGTON, KENTUCKY

NIOSH INVESTIGATORS:
William E. Murray, M.S.
David L. Conover, Ph.D.
Jerome P. Flesch, M.S.

SUMMARY

On August 11, 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request from the Lexington Herald-Leader, Lexington, Kentucky, to evaluate the potential radiation hazards from video display terminals (VDTs). At least one female employee who was pregnant expressed concern about the possible effects of radiation exposure on the development of her child in utero.

Approximately 60 to 80 terminals were used in word processing applications at the newspaper. Both ionizing and nonionizing radiation were measured on a sample (35 units) of terminals selected at random. The survey was carried out on August 12-13, 1980.

The level of ionizing (X-ray) and nonionizing (ultraviolet and radiofrequency) radiation were below the current occupational exposure standards from the Occupational Safety and Health Administration (OSHA) and NIOSH. The X-ray and radiofrequency radiation were below the detection capability of the instrumentation employed for the survey.

The levels of ionizing and nonionizing radiation emitted by these VDTs were below the standards and, in most cases, below the detection capability of the instruments. NIOSH has concluded that there is no radiation hazard to the employees working on or near the terminals. Also, since the levels are very low (in most cases not detectable), there is no radiation hazard from the VDT to the developing embryo or fetus.

KEYWORDS: SIC 2711 (Newspapers), VDTs, ionizing (X-ray) radiation, nonionizing (ultraviolet, radiofrequency) radiation.

HETA 80-213-759
ALABAMA OXYGEN, INCORPORATED
BESSEMER, ALABAMA

NIOSH INVESTIGATOR:
William N. Albrecht, I.H.

SUMMARY

On July 24, 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request from an authorized representative of United Steelworkers of America (USWA), Local 4203, for a Health Hazard Evaluation concerning noise levels at Alabama Oxygen, Incorporated. The facility was an air reduction process which separated oxygen, nitrogen, and argon from the ambient atmosphere. Employees were exposed during the course of their work to noise produced by two large compressor units and from various pressure relief systems.

Area and personal noise measurements were made. An octave band analysis was performed to isolate dominant frequencies. Analysis of the results of the personal noise dosimetry indicated that the present noise levels posed a hazard to the hearing of the employees at Alabama Oxygen. All but one employee was subject to sound pressure levels exceeding the NIOSH-recommended standard of 85 dBA. Personal noise exposure for the six workers evaluated ranged from 84.1 to 94.8 dBA. No area of the plant had noise levels exceeding 115 dBA.

On the basis of the data obtained in this investigation, NIOSH determined that a hazard from overexposure to noise did exist at the time of the survey at Alabama Oxygen. Recommendations for the reduction of employee noise exposure and for a comprehensive hearing conservation program are incorporated into the body of the full report.

KEYWORDS: SIC 2813 (Industrial Gases), noise.

HETA 79-014-760
GENERAL ELECTRIC COMPANY
EVENDALE, OHIO

NIOSH INVESTIGATORS:
John R. Kominsky, I.H.
Theodore Thoburn, M.D.
Mitchell Singal, M.D., M.P.H.

SUMMARY

A Health Hazard Evaluation was conducted by the National Institute for Occupational Safety and Health (NIOSH) at the General Electric Company in Evendale, Ohio, on January 25 and May 22, 1979, to evaluate employee exposures to air contaminants generated during the grinding and polishing of jet engine fan blades. Personal samples were obtained for airborne metallic vanadium and nuisance particulates. Bulk samples of dust were analyzed for metallic nickel and cobalt, and for crystalline silica content. Health questionnaires were completed on 27 exposed workers and medical records obtained for 6 workers with lower respiratory tract symptoms.

Bulk samples of dust collected at various work stations did not contain detectable amounts of metallic nickel, cobalt, or crystalline silica (in the form of quartz or cristobalite).

None of the 13 personal samples showed metallic vanadium concentrations (range 0.01 to 0.23 mg/M3) in excess of the 1.0 mg/M3 NIOSH criterion or the Occupational Safety and Health Administration (OSHA) standard. One personal sample obtained in the "outside shroud area" showed nuisance particulate levels (16.9 mg/M3) in excess of the 10.0 mg/M3 American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) and 15.0 mg/M3 Occupational Safety and Health Administration (OSHA) standard. The workers were exposed to increased levels of nuisance particulates during the short and intermittent periods while polishing fan blades. A personal sample obtained for actual exposure periods during the work shift (totaling 22 minutes) showed an air level of 17.6 mg/M3. Although this concentration, when expressed as an 8-hour TWA (0.81 mg/M3), does not exceed the referenced ACGIH TLV or OSHA standard, the levels should be reduced to minimize unpleasant deposits of particulates in the workers eyes and nose that may occur. The health questionnaires revealed that several workers had respiratory tract symptoms including irritation of the nose. Review of available medical data showed that one worker had a mild airway obstruction with no X-ray evidence of pneumoconiosis.

On the basis of data obtained in this evaluation, NIOSH determined that a health hazard to nuisance particulates existed in the "open shroud area" at the General Electric Company in Evendale, Ohio. Workers in this area were exposed to concentrations of nuisance particulates in excess of the ACGIH TLV and OSHA standard. Health and safety recommendations are offered in the body of the full report.

KEYWORDS: SIC 3510 (Engine and Turbines), vanadium, nuisance particulates, jet engine fan blades.

HETA 80-226-761
SUNDSTRAND DATA CONTROL
REDMOND, WASHINGTON

NIOSH INVESTIGATORS:
Arvin G. Apol, I.H.
William Murray, M.S.
Wordie Parr, Ph.D.

SUMMARY

In July 1980, the National Institute for Occupational Safety and Health (NIOSH) received a request from the management of Sundstrand Data Control to determine if a potential health hazard existed to radiofrequency (RF) energy when workers operated a RF heating device.

A RF heater is used to preheat a plastic compound for injection molding of heat sensors used on airplane wings. Approximately three to five persons have access to the work area. An initial/environmental survey was conducted on July 24, 1980, that consisted of measuring both the electric and magnetic RF radiation emissions.

No RF radiation emissions were detected from any surface except 1 to 2 centimeters from the front of the unit where a small pencil-sized beam produced a magnetic field meter reading of 0.07 amperes squared per meter squared (A^2/M^2), which is well below the Occupational Safety and Health Administration (OSHA) permissible exposure limit of 0.25 A^2/M^2. It was below detectable limits approximately 5 inches from the surface. The leak was caused by a replacement bolt of excessive length used to hold the handle on the lid. The bolt was shortened to allow the lid to properly fit over the lower chamber which reduced the RF levels to 0.029 A^2/M^2. Replacement of the copper strip which had a groove worn in it from the long bolt should reduce the radiation level even further. The electric field was below the detection capability of the instrument.

On the basis of the data gathered in this investigation, NIOSH determined that there was no hazard to RF energy when using the RF heater. Recommendations are incorporated into the body of the full report.

KEYWORDS: SIC 3679 (Electronic Manufacturers), RF radiation.

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City _____ State _____ Zip Code _____

1. What Product or Service does the Establishment Produce? _____

2. Specify the particular building or worksite where the substance(s) is located, including address.

3. Specify the name, title, and phone number of the employer's agent(s) in charge. _____

4. Describe briefly the substance(s) which exists by completing the following:

   Identification of Toxic Substance(s) _____

   Trade Name(s) (If Applicable) _____ Chemical Name(s) _____

   Manufacturer(s) _____

   Does the material have a warning label? ____Yes ____No. If yes; attach copy of label or a copy of the information contained on the label.

   Physical Form of Substance(s): ☐ Dust ☐ Gas ☐ Liquid ☐ Mist ☐ Other

   How are you exposed? ☐ Breathing ☐ Swallowing ☐ Skin Contact

   Number of People Exposed _____ Length of Exposure (Hours Day) _____

   Occupations of Exposed Employees _____

5. Using the space below describe further the nature of the conditions or circumstances which prompted this request and other relevant aspects which you may consider important, such as the nature of the illness or symptoms of exposure, the concern for the potentially toxic effects of a new chemical substance introduced into the workplace, etc. _____

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6. (a) To your knowledge has this substance been considered previously by any Government agency? _____ (b) If so, give the name and address of each. _____

_____

_____

(c) and, the approximate date it was so considered. _____

7. (a) Is a similar request currently being filed with or under investigation by any other Government (State or Federal) agency? _____ (b) If so, give the name and address of each _____

_____

8. Requester — (*Employees of State, Local or Federal Agencies are not eligible.*)
The undersigned Requester believes that a substance (or substances) normally found in the place of employment may have potentially toxic effects in the concentrations used or found.

Signature _____ Date _____

Typed or Printed Name _____ Phone: Home— _____

Address { Street _____ Business— _____

City _____ State _____ Zip Code _____

Check One:

☐ I am an Employer Representative

☐ I am an Authorized Representative of, or an officer of the organization representing the employees for purposes of collective bargaining. State the name and address of your organization. _____

_____

☐ I am an employee of the employer and an Authorized Representative of two or more employees in the workplace where the substance is normally found. Add signatures of authorizing employees below:

Name _____ Phone _____

Name _____ Phone _____

☐ I am one of three or less employees in the workplace where the substance is normally found.

Please indicate your desire: ☐ I do not want my name revealed to the employer.

☐ My name may be revealed to the employer.

Authority:
Section 20(a)(6) of the Occupational Safety and Health Act, (29 U. S. C. 669(a)(6)) provides as follows: The Secretary of Health, Education, and Welfare shall . . . determine following a written request by any employer or authorized representative of employees, specifying with reasonable particularity the grounds on which the request is made, whether any substance normally found in the place of employment has potentially toxic effects in such concentrations as used or found; and shall submit such determination both to employers and affected employees as soon as possible. If the Secretary of Health, Education, and Welfare determines that any substance is potentially toxic at the concentrations in which it is used or found in a place of employment, and such substance is not covered by an occupational safety or health standard promulgated under section 6, the Secretary of Health, Education, and Welfare shall immediately submit such determination to the Secretary of Labor, together with all pertinent criteria.

For further information:
Telephone: AC 513-684-2176

Send the completed form to:

National Institute for Occupational Safety and Health
Hazard Evaluation and Technical Assistance Branch
4676 Columbia Parkway
Cincinnati, Ohio 45226

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